



NORTH ELECTRIC COMPANY

Gallon, Ohio, 44833
Telephone 468-2420
Cable NORTHPHONE
Teletype 419-464-4860

T NELSON
SYSTEMS CONSULT
BOX 1546
POUGHKEEPSIE NY

Dear Sir:

Thank you for your inquiry on Data Key, the low cost data collection system.

We must apologize for the lateness of our answer but the response to Data Key has been such as to create a considerable problem for us.

To get you quicker answers to your questions on Data Key, I would like to mail you the literature on each component of Data Key as soon as it is printed and you will find enclosed the catalog sheet on Printer-Phone, the first unit released. Catalogs on the rest of the system will be mailed as soon as printed and if you have any questions on applications of the Printer-Phone or on its particular uses in the Data Key system, please write or phone at your convenience.

Very truly yours,



J. M. Nestor
Assistant Sales Manager

JHN:pam

Enclosure: Printer-Phone Catalog Sheet (1)



PRINTER-PHONE™

BY

NORTH ELECTRIC CO., GALION, OHIO

Printer-Phone™ is a keyboard operated numeric-data input device which provides its operator with a printed copy of the data which it transmits over a communications circuit.

The standard Printer-Phone just prints the data transmitted. Accumulator - equipped Printer - Phones provide, in addition, add and subtract functions and reverse channel units allow a two-way interchange of data.

Printer-Phone transmits data as multi-frequency tones in a two-out-of-eight code. This coding scheme plus

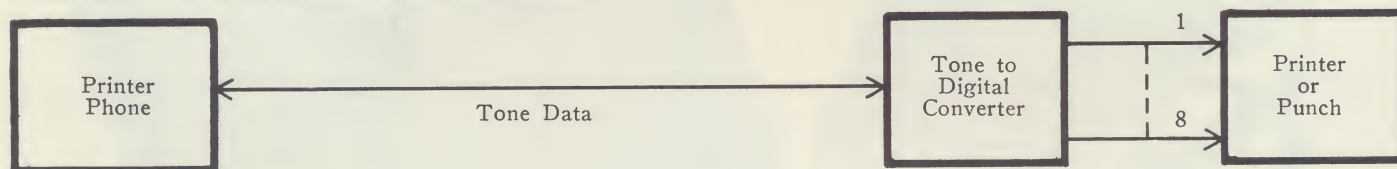
the use of the receiver voice guard circuits provides a highly reliable system for transmission of data.

The tone frequencies used are the same as those in the U. S. pushbutton dial telephone system, but Printer - Phone provides transmission security not available to standard pushbutton phones, by providing a means for the user to select with ease one of 256 separate data transmission codes.

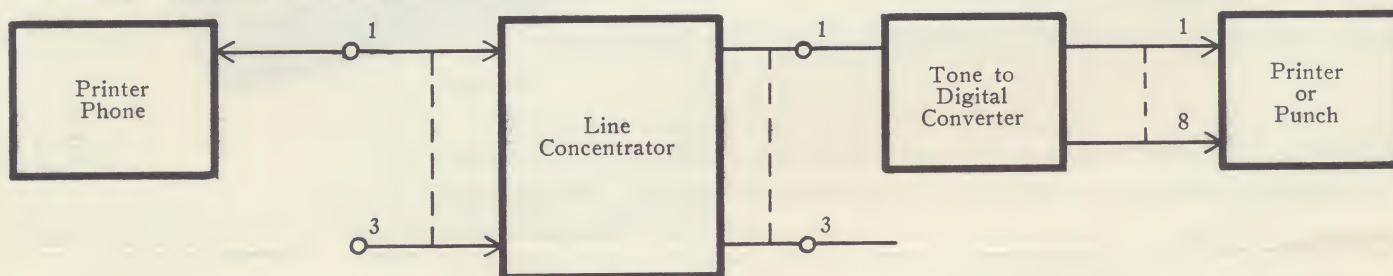
Printer-Phone may be operated over full period private line leased telephone circuits or, with the concurrence of the telephone company involved, can be used over the switched dial telephone network.

TYPICAL PRINTER-PHONE SYSTEMS

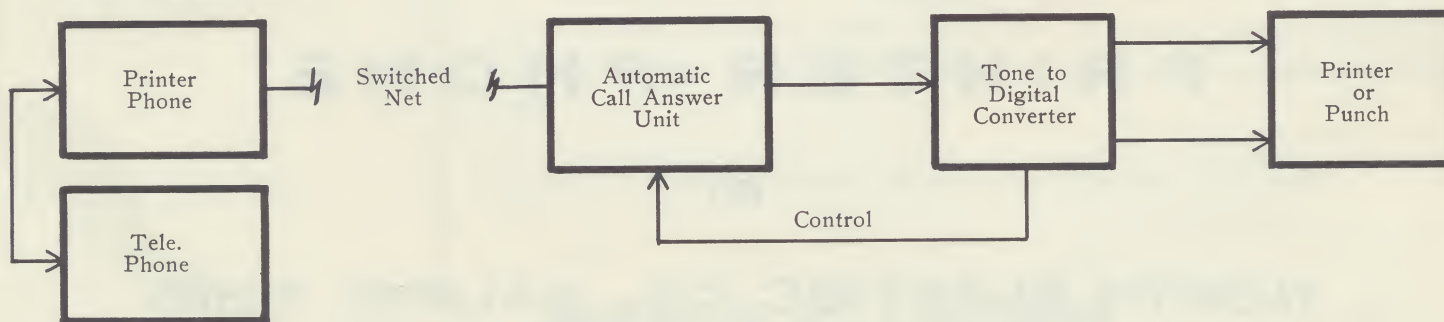
Printer-Phones may be operated as a closed system



or through North's Line Concentrator Units



or over the switched net



North sells or leases Printer-Phones for use in existing Data Systems and sells or leases entire systems including Tone-to-Digital Convertors, Line Concentrators, Automatic Call Answer Units and Printers and Punches.

TYPICAL PRINTER-PHONE OPERATION

Operator lifts phone off hook, hears dial tone and dials or Key-Calls the telephone number of the data collection center (on a full period circuit no dialing would be necessary).

Ringing tone is heard until the call is answered nor-

mally or automatically. (See Data-Key Data Receiver Unit for details.)

Operator moves Voice-Data Key on phone or printer unit to data position (on a full-period circuit, switch, would be locked in Data position), operator keys in typical data.

Step	Function	Keys Dep.	Tone Trans.	Quan. Left In Printer Accum.	Data Printed
1	Enter Station Id	895	895	Zero	None
2	Print Station Id	Non-Add	10	Zero	895N
3	Enter Account No.	4657985	4657985	Zero	None
4	Print Account No.	Non-Add	10	Zero	4657985N
5	Enter Amount	21563	21563	Zero	None
6	Add to Acc.	Add	11	215.63	215.63
7	Enter Account No.	1328479	1328479	215.63	None
8	Print Acct. No.	Non-Add	10	215.63	1328479N
9	Enter Amount	465987	465987	215.63	None
10	Add to Acc.	Add	11	4875.50	4659.87
11	Enter Account No.	5512658	5512658	None	None
12	Print Acct. No.	Non-Add	10	None	5512658N
13	Enter Amount Paid	51370	51370	4875.50	None
14	Subtract from Acc	Sub.	12	4361.80	51370
15	Print Content of Accumulator	Add	11	Zero	4361.80T
16	Transmit Content of Accumulator	436180	436180	4361.80	None
17	Record Transmission of Accum.	Add	11	4361.80	436180
18	Clear Accum.	Add	11	Zero	436180T
19	Test Zero in Acc.	Add	11	Zero	.00T

8.95 N

4 6,5 7 9.85 N

2 1 5.63

1 3,2 8 4.79 N

4,6 5 9.87

5 5,1 2 6.58 N

5 1 3.70 -

4,3 6 1.80 T

4,3 6 1.80

4,3 6 1.80 T

.00 T

TECHNICAL SPECIFICATIONS

TONE SIGNALLING FREQUENCIES

The digits 0-9 and the control functions 11-16 are each defined by a unique combination of two of the following eight frequencies, one selected from the low group, one selected from the high group.

Low Group	High Group
697 cps	1209 cps
770 cps	1336 cps
852 cps	1477 cps
941 cps	1633 cps

The specific frequency combination which defines each digit or function is determined by whichever of 256 coding plugs the user inserts.

Printer-Phones are available on special order with other frequency combinations.

Power Supply	110 VAC 1 amp needed for printer Drive Motor (manual model available). 48 or 24 V telephone line battery operates telephone and oscillators. No local DC supply needed.
Telephone Handset	Non-positional carbon capsule transmitter, nominal resistance 375 ohms; Magnetic type receiver, nominal impedance 375 ohms.
Line Matching Net	Printed circuit unit, anti-side tone with loop compensation to equalize send and receive levels on varying loop lengths. Receiver circuit varistor protected for click suppression.
Output Levels	Voice, on composite tone signal, ODBM to -7DBM set up dummy manufacture.
Rotary Dial	Speed 10 P. P. S. Pulse ratio 62.5% break, 37.5% make. Designed for 1,000,000 operation life. Dialing contacts RC protected. May be replaced with standard pushbutton MF dial unit.
Ringer	Straight line, 18,000 ohm impedance @ 20 cps 500,000 ohms, 500 - 3500 cps.
Printer Options	Operation only on-line or both on-line and off-line: at customer option, 6, 7, 8, 9, 10 column Printout: List-only, or list and accumulate (add and subtract) credit balance accumulator: Up to four non-print functions transmitted (start-of-message, end-of-message, interfile separations, etc.) as user may wish.
Max. Data Entry Rate	Nominal 15 digits per second, nominal print cycle 300 milliseconds.



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ELECTRONETICS DIVISION • GALION, OHIO